

NASA

October 3, 1972

Dr. John Naugle
Headquarters
National Aeronautics and Space Administration
Washington, D.C. 20546

Dear John,

I am still wondering how we might be able to compromise with the budget squeeze and still manage a mission to Mars in 1977 or 1979 that can make more effective use of the data we have collected in 1972 and perhaps 1976.

I am told that it would be physically and fiscally impossible to mount new programs in time for the 1977 opportunity and that it may be almost impossible to do this for 1979. So I am led to think of some seemingly desperate alternatives.

Has the following been thought about? Suppose we regard the doubling of spacecraft for Viking 1976 as a safeguard not for all of the risks that might attend one mission but for the rather substantial part of them that would be revealed during the first 30 days or so after launch. Then if there were a successful launch of the first vehicle it might still be possible to hold the second vehicle and spacecraft in reserve, that is to say to save it for a 1977 or 1979 mission. This is even a decision that does not have to be made until the last minute although some celebrations about that contingency would, of course, be likely to pay off very handsomely. You may say that we also need to keep a second mission system in reserve against the hazards of the latter part of the attempt. But a reply to that is why not defer the backup for two years, in that event, when it is more likely that we will have learned enough about the reasons for possible failure to be able to respond more effectively to it.

If we have this contingency in mind it may then also be possible to give some thought to the incremental costs not only of deferring the backup mission for another two years, which I well realize is not cost-free, but also to possible revisions of the mission for the sake of scientific optimization. This would be gambling on a mortgage for the future but it would have the possible shortrun advantage of keeping the evident program costs for the next couple of years at least within the same limits that they are under the present mission plan. Against the argument that there would be inefficiencies in not doubling up during Viking operations one could answer that it may be more of a strain then we know how to deal with to have two spacecrafts in orbit and landers simultaneously, and furthermore that having some continuing operations to keep the teams busy is in itself a scientific and technical advantage.

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CC to ECL

Dr. John Naugle

- 2 -

10/3/72

I realize that every perturbation of thinking in itself exacts some costs but it seemed to me that this was an idea that you would be able to evaluate without too much trouble at least to determine whether it is worth looking into it any further and that it is much less drastic than many of the other options.

Sincerely yours,

Joshua Lederberg
Professor of Genetics

JL/rr